Strong excitation (on page 295)

The result here shows the weak further growth with strong forcing (the forcing amplitude is 6.5 percent of mean velocity), i.e. the saturation phenomenon of forcing amplitude. However, Fig. 7 does not have such a saturation, where the forcing amplitude is already 32% of the mean velocity.

- C. -M. Ho & P. Huerre (1984) "Perturbed free shear layers". *Annual Review of Fluid Mechanics*. vol 16, pp365-423.

3.2 Reynolds number (on page 399-400)

Here the nature frequency (i.e. most probable frequency) scales with velocity. However, in Fig. 10 and Fig 11 of Wang (2000), there is another most-probable frequency, which is a constant (or narrow band) and does not scale with the velocity. Only under forcing of this narrow band frequency, the mixing becomes very fast. This is shown in Fig. 9 of Wang (2000).

4.4 Forcing frequency (on page 407-408)

Here the forcing frequency related with nature frequency, which scales with the velocity. However, Wang (2000) shows that only a narrow frequency band can result in the rapid mixing (i.e. around 6 Hz in Fig. 2, Fig 7 and Fig 9).

5.2 Rescaled Shear layer (on page 417-418)

Here again shows that the shape of the mixing region is wedge under forcing. However, Fig. 7g in Wang (2000) exhibits no such a wedge due to rapid mixing (or spreading).

- G. R. Wang (1999) "Turbulent Mixing, Stability and Secondary Flow in a Confined Configuration". Dissertation, Technical University Berlin, Germany, also published in

Wissenschaftliche Schriftenreihe Stroemungstechnik, Bd. 8. ISBN 3-89574-376-3, Verlag Dr. Koester, Germany, 2000.

10.1.1.1 Phenomenon and forcing frequency f effect (on page 72-73 and Fig. 10.1)

10.1.1.2 Amplitude effect (on page 73-75 and Fig. 10.2)

These sections show that there are two receptivity mechanisms, one is new and corresponds to the present invention. It can also be used for wake (where the two streams have the same velocity) for the rapid mixing.

- G. R. Wang (2000) "On large structures and turbulent mixing in confined mixing layers under active control" submitted to *Journal of Fluid Mechanics*, (2000).

3.1 Forcing frequency effect and a new instability mechanism

3.3 Forcing amplitude A_f influence (on page 8-12 and especially Fig. 7, 8 and 9)

3.4 Influence of initial Reynolds number (on page 12 and Fig. 10 and Fig. 11)

These sections demonstrate that a new mechanism for rapid mixing is invented. Fig. 8 indicates that the secondary vortices (resulted from the interaction between corner vortices and primary vortices) play an important role for the rapid mixing under the forcing of the novel receptivity mechanism (i.e. the narrow frequency band).

I regret that the copies of the references mentioned in the last application were not enclosed. These references might help you to understand that no new issue has actually been added. I has sent to you some responses one week ago. The information about the word "a narrow frequency band" and "interaction between corner vortices and primary vortices" are also indicated in the third paragraph on page 2 of the original application filed on April 1, 1999.

I has also got contact with Professor I. Wygnanski, the inventor of the Patent of Wygnanski and Fiedler (US Patent No: 4,257,224), and asked him to express to you his opinion about the difference of the two inventions. This might help you to understand the difference.

If you could give me some advice to rewrite the claim, it would be very much appreciated.

Continued Prosecution Application with a check of $355.00 for it

As Ms Claudia Sullivane from PTO told me on telephone that a fee of $355.00 is required for the Continued Prosecution Application, the corresponding check is enclosed for it.

Conclusion

Applicant respectfully states that the application is now in a condition for immediate allowance and respectfully solicits same.

Yours faithfully,

Guiren Wang

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